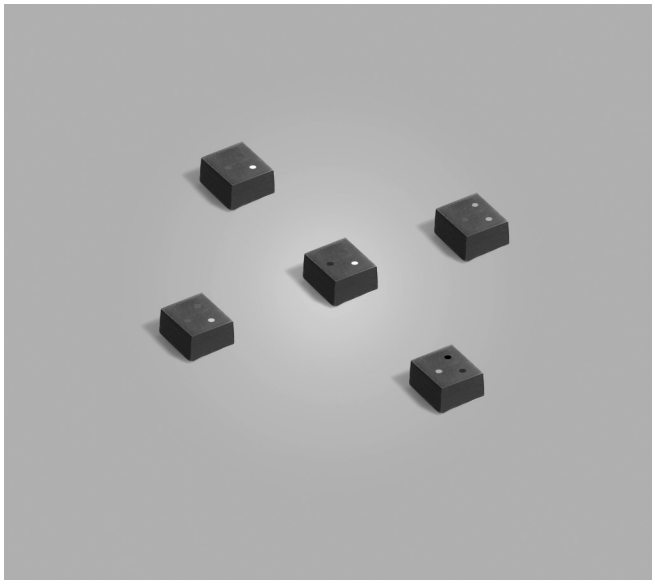
Shielded Power Inductors – EPL2010



- Smallest shielded power inductors; 2.0 × 2.0 × 1 mm high
- Extremely low DCR and very high SRF ratings
- AEC-Q200 Grade 3 qualified (–40°C to +85°C ambient)
- Isat ratings as high as 2.9 A

Designer's Kit C412 contains 5 each of all values
Core material Ferrite
Environmental RoHS compliant, halogen free
Terminations Since August, 2008: RoHS compliant tin-silver-copper (96.5/3/0.5) over tin over nickel over silver-platinum. Prior to August, 2008: RoHS compliant tin-silver-copper over gold over nickel over silver-platinum.
Weight 13 – 18 mg
Ambient temperature –40°C to +85°C with (40°C rise) Irms current.
Maximum part temperature +125°C (ambient + temp rise). Derating.
Storage temperature Component: –40°C to +125°C.
Tape and reel packaging: –40°C to +80°C
Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles
Moisture Sensitivity Level (MSL) 1 (unlimited floor life at <30°C / 85% relative humidity)
Failures in Time (FIT) / Mean Time Between Failures (MTBF) 38 per billion hours / 26,315,789 hours, calculated per Telcordia SR-332
PCB washing Tested to MIL-STD-202 Method 215 plus an additional aqueous wash. See Doc787_PCB_Washing.pdf.

Part number[1]	Inductance[2] ±20% (µH)	DCR (Ohms)[3] nom	DCR (Ohms)[3] max	SRF typ[4] (MHz)	Isat (A)[5] 10% drop	Isat (A)[5] 20% drop	Isat (A)[5] 30% drop	Irms (A)[6] 20°C rise	Irms (A)[6] 40°C rise
EPL2010-181ML_	0.18	0.024	0.029	615	1.3	2.2	2.9	2.37	3.17
EPL2010-271ML_	0.27	0.032	0.038	412	1.2	2.1	2.6	1.76	2.31
EPL2010-301ML_	This part number has been changed to EPL2010-271. The EPL2010-301 is not available								
EPL2010-421ML_	0.42	0.040	0.048	283	1.0	1.6	2.2	1.66	2.16
EPL2010-471ML_	This part number has been changed to EPL2010-421. The EPL2010-471 is not available								
EPL2010-681ML_	0.68	0.058	0.070	214	0.80	1.3	2.0	1.48	1.94
EPL2010-821ML_	0.82	0.068	0.082	173	0.70	1.2	1.6	1.28	1.68
EPL2010-102ML_	1.0	0.099	0.119	145	0.65	1.0	1.35	1.04	1.36
EPL2010-152ML_	1.5	0.141	0.155	102	0.60	0.95	1.30	0.799	1.04
EPL2010-222ML_	2.2	0.202	0.222	80	0.43	0.78	1.05	0.751	0.978
EPL2010-332ML_	3.3	0.272	0.299	63	0.35	0.63	0.85	0.671	0.879
EPL2010-472ML_	4.7	0.429	0.472	50	0.30	0.47	0.65	0.527	0.680
EPL2010-682ML_	6.8	0.512	0.563	46	0.24	0.43	0.57	0.440	0.575
EPL2010-822ML_	8.2	0.827	0.910	42	0.22	0.40	0.53	0.415	0.520
EPL2010-103ML_	10	0.914	1.00	33	0.20	0.35	0.47	0.392	0.495
EPL2010-123ML_	12	0.939	1.12	32	0.15	0.26	0.35	0.380	0.480

1. When ordering, please specify **termination** and **packaging** codes:

EPL2010-103MLC

Termination: **L** = RoHS compliant tin-silver-copper over tin over nickel Special order, added cost: **S** = non-RoHS tin-lead (63/37).

Packaging: **C** = 7″ machine-ready reel. EIA-481 embossed plastic tape (2000 parts per full reel).
B = Less than full reel. In tape, but not machine ready. To have a leader and trailer added ($25 charge), use code letter C instead.
D = 13″ machine-ready reel. EIA-481 embossed plastic tape. Factory order only, not stocked (7500 parts per full reel).

2. Inductance tested at 1 MHz, 0.1 Vrms, 0 Adc.
3. DCR measured on a micro-ohmmeter.
4. SRF measured using Agilent/HP 4395A network analyzer or equivalent.
5. DC current at 25°C that causes the specified inductance drop from its value without current. Click for temperature derating information.
6. Current that causes the specified temperature rise from 25°C ambient. This information is for reference only and does not represent absolute maximum ratings. Click for temperature derating information.
7. Electrical specifications at 25°C.

Refer to Doc 362 "Soldering Surface Mount Components" before soldering.

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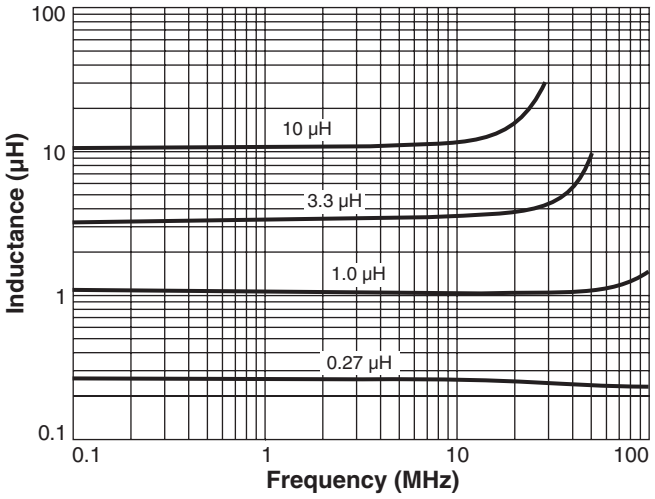
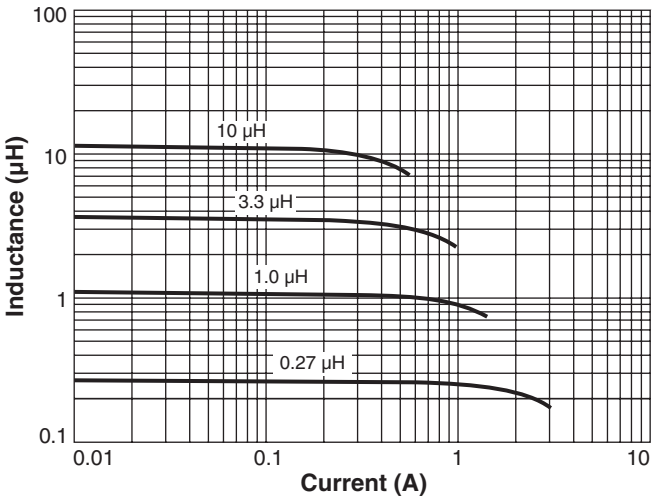
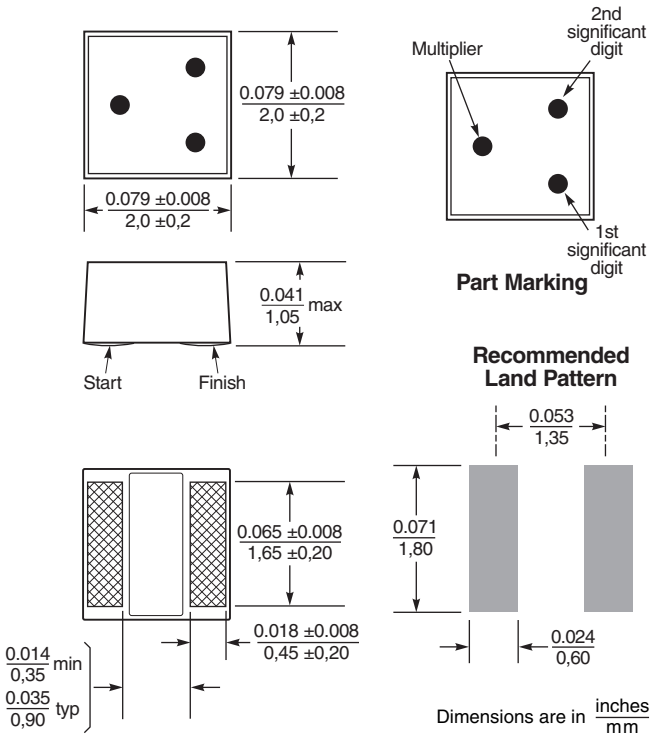
Shielded Power Inductors – EPL2010 Series

Typical L vs Frequency



Typical L vs Current





Part Marking (Parts manufactured prior to Oct. 20, 2009 may not be marked.)

Part number	Value	1st digit	2nd digit	Multiplier
EPL2010-181	0.18 µH	Brown	Gray	Brown
EPL2010-271	0.27 µH	Red	Violet	Brown
EPL2010-421	0.42 µH	Yellow	Red	Brown
EPL2010-681	0.68 µH	Blue	Gray	Brown
EPL2010-821	0.82 µH	Gray	Red	Brown
EPL2010-102	1.0 µH	Brown	Black	Red
EPL2010-152	1.5 µH	Brown	Green	Red
EPL2010-222	2.2 µH	Red	Red	Red
EPL2010-332	3.3 µH	Orange	Orange	Red
EPL2010-472	4.7 µH	Yellow	Violet	Red
EPL2010-682	6.8 µH	Blue	Gray	Red
EPL2010-822	8.2 µH	Gray	Red	Red
EPL2010-103	10 µH	Brown	Black	Orange
EPL2010-123	12 µH	Brown	Red	Orange

Note: All marked parts have three dots. Black dot, used only on -102 and -103 as the second significant digit, may be very difficult to see.

Small surface blemishes are not unusual and do not adversely affect performance. Wire may be visible inside the voids.

Acceptable void sizes:
Top: 0.01 in / 0,254 mm × 0.01 in / 0,254 mm
Sides: 0.02 in / 0,5 mm × 0.047 in / 1,2 mm

Packaging 2000/7″ reel; 7500/13″ reel Plastic tape: 8 mm wide, 0.28 mm thick, 4 mm pocket spacing, 1.3 mm pocket depth

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